

ACTION SHEET 29

between

**The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)
and**

**The United States Department of Energy (DOE)
for
PFPP Remote Monitoring and Item Identification System**

1. Introduction

Under Article II (Area of Cooperation) of the Agreement between PNC and DOE for Cooperation in Research and Development Concerning Nuclear Material Control and Accounting Measures for Safeguards and Nonproliferation (herein called the "Agreement"), dated September 15, 1993, DOE and PNC undertake to carry out a cooperative effort in nonproliferation with the development of the elements of a Remote Monitoring System (RMS) for nuclear nonproliferation at the Fast Breeder Reactor Line of the Plutonium Fuel Production Facility (PFPP).

2. Scope of Work

This Action Sheet provides for the demonstration of the elements of a system which could provide remote monitoring of Plutonium Canister Assay Systems (PCAS) at PFPP. The system must provide visual surveillance as well as capability for item identification. System output must be provided at the PFPP inspectors room. Capability to eventually access the data off-site must also be provided. The work performed under this Action Sheet shall be performed at the Sandia National Laboratories (SNL) and at the PFPP in accordance with the terms and conditions of the Agreement.

3. Program Management

SNL is responsible for demonstration of the elements of a system that will permit remote monitoring of material flow through PCAS#4 at the PFPP. Work to be performed is identified in Appendix I. PNC is responsible for providing design information, operating data, and other information required for completion of this work. Appendix II identifies key personnel working on this project.

DOE and SNL shall work directly with PNC in planning tasks and resolving programmatic and technical questions. SNL shall start by developing and circulating work plans with projected milestones for each task and update the work plans with PNC concurrence as work progresses.

SNL and PNC shall prepare progress reports at appropriate milestones in the work, and present written and oral reports at meetings of the Permanent Coordinating Group (PCG).

4. Fiscal Management

PNC shall make a cash contribution with the sum of \$180,000 in United State dollars to conduct the activities related to the demonstration of the elements of a system which could provide remote monitoring of PCASs at PFPF as defined in Appendix I of this Action Sheet in the following manner:

a.) A contribution of \$80,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in JFY 1996 (Japanese Fiscal Year) after the date of signature of the Action Sheet.

b.) A contribution of \$50,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1997. This payment is subject to approval and appropriation of necessary funding by the Japanese Government for JFY 1997.

c.) A contribution of \$50,000 in United States dollars shall be due and payable upon receipt of an invoice to be issued in April 1998. This payment is subject to approval and appropriation of necessary funding by the Japanese Government for JFY 1998.

All contributions by PNC shall be due and payable within thirty days of receipt by PNC of an invoice from DOE, subject to availability of appropriated funds to PNC.

DOE shall be responsible for the budget planning and financial management and shall make best efforts to complete the PNC-funded activities in the Appendix I satisfactorily and within the cash contribution by PNC. DOE costs are determined in accordance with DOE's policy for costing work it performs for others as set forth in 10 CFR Part 1009. The total cost to PNC for DOE's performance of work under this Action Sheet shall not, without PNC's prior consent exceed the contributions set forth above.

DOE shall not begin or carry out work prior to entry into force of the Agreement and Action Sheet and receipt of the required payment in advance. Work shall not be continued after funds from PNC have been depleted.

Throughout the duration of work under this Action Sheet, PNC shall provide sufficient funds in advance to reimburse DOE for causing SNL to perform the work described in this Action Sheet, and DOE shall have no obligation to perform in the absence of adequate advance funds. Payment in advance from PNC shall be sufficient to cover the expected obligation and cash requirements of the work until a subsequent request for payment in advance can be made, collected and recorded. In this regard, sufficient advance funds shall be provided to maintain, at a minimum, a continuous 90-days advance of funds for expected DOE fund requirements during


the life of this Action Sheet. Advances shall be sufficient to cover expected termination costs that DOE would incur on behalf of PNC.

5. Duration and Termination

This Action Sheet shall enter into force upon the later date of signature and shall continue in force for a three year period or until mutually agreed by the parties that all activities under this Action Sheet are completed.

For the Power Reactor and Nuclear Fuel
Development Corporation

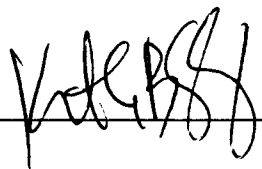
Signature: 


Printed Name:  Masami Katsuragawa

Title: Director
International Division

Date: March 5, 1997

For the United States Department of
Energy

Signature: 

Printed Name:  Kenneth E. Sanders

Title: Director
International Safeguards Division

Date: February 25, 1997

ACTION SHEET 29

APPENDIX I

Remote Monitoring System for the PFPF FBR Line

1. Project Outline

This project involves the development and demonstration of the elements of an Item Identification System which could provide remote monitoring of Plutonium Canister Assay Systems (PCASs) at PFPF.

Phase I

Task 1 - Image Compression and Authentication Module (ICAM) Demonstration

In Task 1 Sandia will:

- Develop a detailed task plan.

- Coordinate technical issues with PNC.

- Assemble a Video Storage Module

- Install ICAM with a standard video camera.

- Deliver the ICAM system with a telephone modem to PNC for demonstration of the authenticated video link between the camera and a remote location.

- Provide software necessary to demonstrate video image transfer to a PNC-supplied computer.

In Task 1 PNC will:

- Coordinate technical issues with SNL.

- Select a location for the image review station.

- Procure the image review station computer. Specifications will be provided by SNL.

Task 2 -Item Identification System Development

In Task 2 Sandia will:

Develop a detailed task plan.

Coordinate technical issues with PNC.

Develop a method to obtain container identification information from the video image utilizing optical character recognition technology.

Demonstrate the system elements at SNL.

In Task 2 PNC will:

Coordinate technical issues with SNL.

Decision Point

At the conclusion of Phase I, SNL and PNC will jointly:

- Develop system requirements for planned implementation
- Develop a project plan for remainder of the project
- Reassess the cost and schedule of the planned work before proceeding

Phase II - Item Identification System Implementation

In Phase II SNL will:

Develop a detailed project plan for the Phase

Coordinate technical issues with PNC

Procure and assemble a second ICAM system for integration into a test system at SNL.

Assemble Item Identification System including ICAM.

Develop a method (coordinate with LANL) to detect the presence of a canister in PCAS#4

Integrate the presence detection with the video system to provide video triggering when container presence is detected.

Store the container identification information in a database along with time and date at a data acquisition computer.

Confirm compatibility with LANL-developed PCAS radiation measurement equipment

Demonstrate resulting system at SNL

During Phase II PNC will:

Coordinate technical issues with SNL.

Phase III - System Implementation and Integration

In Phase III SNL will:

Coordinate technical issues with PNC

Develop a detailed project plan for the Phase

Install and demonstrate the operation of the Item Identification System at PCAS#4

Test and demonstrate the remote monitoring capabilities of the Item Identification System

During Phase III PNC will:

Coordinate technical issues with SNL.

Provide support for system installation (e.g. providing cabling, power and mounting brackets for system elements).

2. Sites

This work will be conducted at the Sandia National Laboratories facilities in Albuquerque, New Mexico, USA, and at the PNC PFPP Facility at Tokai, Japan.

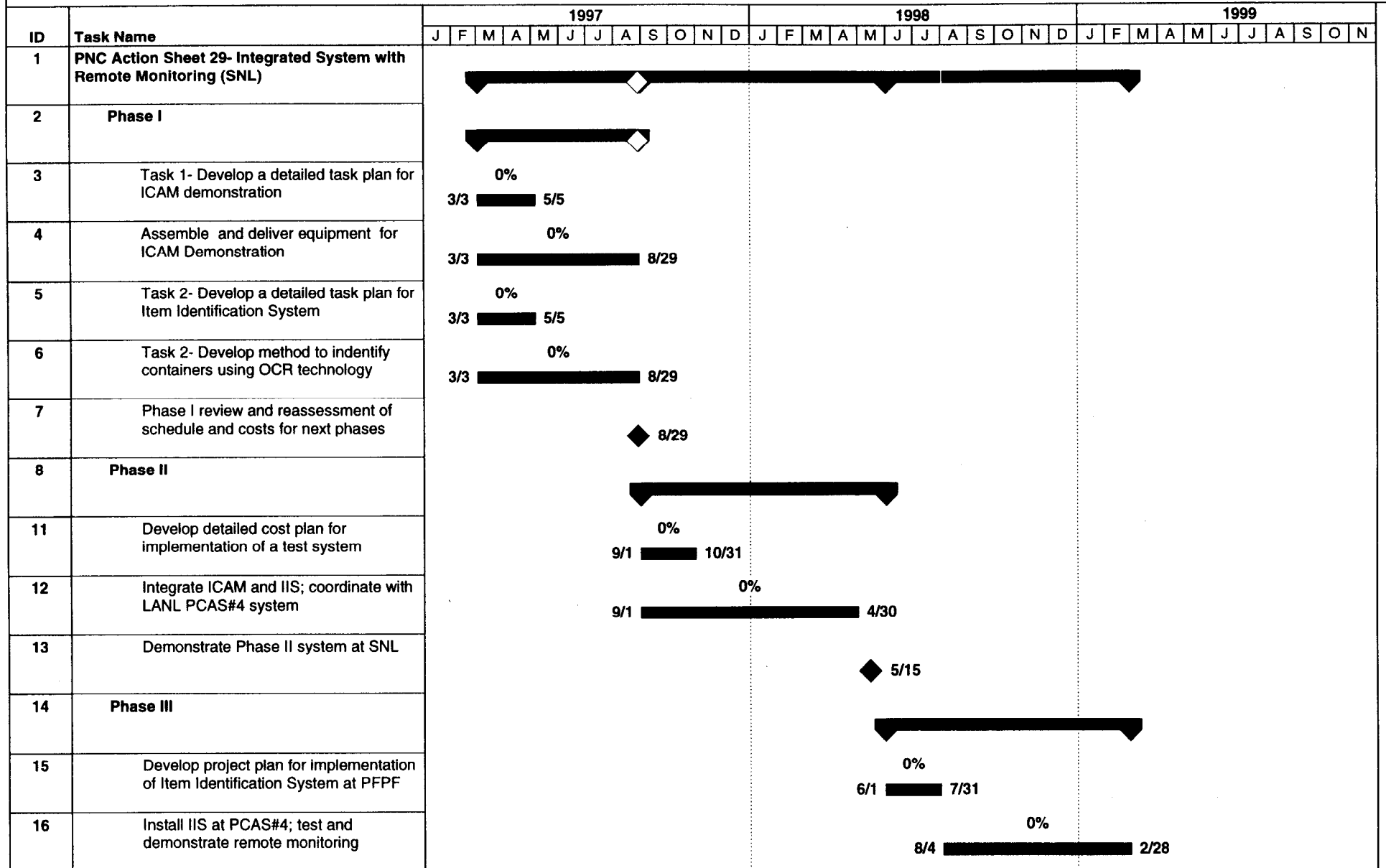
3. Programmatic Responsibilities

- A. SNL will be responsible for providing best efforts within the funding and schedule for the work. Any tests or technical assistance shall be provided on a non-interference basis with existing SNL programs.
- B. PNC will be responsible for providing information about the PFPP design and operation. PNC will be responsible for supporting the installation and demonstration of the system.
- C. PNC will provide the computer equipment required for ICAM image processing and data base manipulation. SNL will specify the computer requirements.

4. Schedule

The proposed schedule for this project is given in the chart on the next page. The schedule will be followed on a best-effort basis depending on availability of funding and parts.

SG 070 Pacific Rim (PNC AS-29)



Project: PNC AS 29
Date: Tue 2/25/97

Task



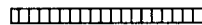
Summary



Rolled Up Progress



Progress



Rolled Up Task



Milestone



Rolled Up Milestone



ACTION SHEET 29

APPENDIX II

Key Personnel

Power Reactor and Nuclear Fuel Development Corporation

1. PNC Headquarters

Tetsuo Ohtani, General Manager
Safeguards Office
Nuclear Material Control Division
Power Reactor and Nuclear Fuel Development Corporation
Sankaidoh Building
9-13, 1-Chome, Akasaka
Minato-Ku, Tokyo, 107, Japan

Takeshi Kawamura, General Manager
International Cooperation Office
International Division
Power Reactor and Nuclear Fuel Development Corporation
Sankaidoh Building
9-13, 1-Chome, Akasaka
Minato-Ku, Tokyo, 107, Japan

Department of Energy

1. DOE Headquarters

Kenneth Sanders, Director
International Safeguards Division
Office of Arms Control and Nonproliferation
NN-44, GA-017
Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

John H. Capps
International Safeguards Division
Office of Arms Control and Nonproliferation
NN-44, GA-017
Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

2. DOE Albuquerque Operations Office
James R. Anderson
Science and Technology Transfer Division
DOE/Albuquerque Operations Office
P.O. Box 5400
Albuquerque, NM 87115

3. Sandia National Laboratories

Kenneth Ystesund, Project Manager
On Site Monitoring Applications
Sandia National Laboratories
PO Box 5800
Albuquerque, NM 87185-0567

Darryl Drayer
Transparency and Verification Analysis
Sandia National Laboratories
PO Box 5800
Albuquerque, NM 87185-0656